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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,160	08/31/2005	Bernard Buathier	BASF.10033	8322

45473	7590	07/19/2007
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EXAMINER
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ART UNIT	PAPER NUMBER
1621	

MAIL DATE	DELIVERY MODE
07/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/532,160

Applicant(s)

BUATHIER ET AL.

Examiner

Yate K. Cutliff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 08/31/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status

1. Claims 1- 12 are currently pending.

Priority

2. It is noted that this application appears to claim subject matter disclosed in prior FR Application No. 0213392, filed October 25, 2002. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior

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application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Specification

3. The disclosure is objected to because of the following informalities: It is not clear whether the Title is underlined or has been cross out.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kempf et al. (U.S. Patent No. 6,747,175) in view of Wikipedia, Protic Solvent, Wikipedia Foundation, Inc. July 12, 2007, pp1.

Applicant Claims

Applicant's claim 1 reads on a process for preparing a aniline derivative of formula (I) by the reaction of formula (II) with a dihalogen X₂, by introducing the two compounds simultaneously into a polar aprotic solvent in a dihalogen to compound of formula (II) ration ranging from 1.9 to 2.5 and at a temperature ranging from 100 to 300°C.

Further, in claim 2 Applicant defines formula (I) as 2,6-dichloro-para-trifluoromethylaniline.

In claims 3 and 4 the solvent used in claim 1 is a chlorinated aliphatic solvent subsequently defined as dichloroethane.

In claims 5 and 6 the solvent as a chlorinated aromatic solvent subsequently defined as monocholorbenzene.

Claims 7-10 further limits the temperature and molar ranges.

Lastly, is claims 11 and 12 the solvent used in the process of claim 2 is either a chlorinated aliphatic solvent or chlorinated aromatic solvent.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Kempf et al. discloses a method of chlorinating aniline. Kempf et al. teaches that it is possible to carry out dichlorination of aniline at temperatures of between 0 and 150°, and stating that double chlorination occurs at temperatures greater than ambient temperature. Further, it is stated that the best yields are achieved at temperatures greater than 100°. (Column 2, lines 38-50). Furthermore, it is taught that the chlorine is introduced so that the medium always remains chlorinating, in other words the rate of consumption of the chlorinating agent (e.g. chlorine) is at most equal to the rate of

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introduction into the medium of the chlorinating agent. (Column 2, lines 58 – 61). Kempf, et al teaches that the chlorine is introduced gradually and simultaneously over a heel of solvent or of reaction mass.... (Column 3, lines 6-8). Lastly, the targeted reaction takes place with generally 2 moles of chlorine per 1 mole of substrate. (Column 3, lines 23 – 24). Lastly, the chlorination process is carried out on para-trifluoromethylaniline to yield chlorinated ortho-ortho to the aniline functional group. (Column 4, lines 8-10). The reaction steps used in Kempf et al. teaches a process for making a dihalogen aniline product, which is clearly embraced by Applicant's claims.

Wikipedia discloses that polar aprotic solvents are solvents that share ion dissolving power with protic solvents but lack the acid hydrogen. It is noted that hydrogen fluoride is a protic solvent.

**Ascertainment of the Difference Between the Scope of the Prior Art
and the Claims (MPEP §2141.012)**

Kempf et al. lacks the express teaching of the use of a polar aprotic solvent in the chlorination of an aniline and discloses the use hydrofluoric acid as the solvent. Further, Kempf et al. lack the express teaching of polar aprotic solvent being a chlorinated aliphatic solvent, wherein the solvent can be dichloroethane; or a chlorinated aromatic solvent, wherein the aromatic solvent can be monochlorobenzene. Hydrofluoric acid is known in solvent art as a protic solvent because it has a dissociable hydrogen. For this regard, the Examiner joined the teaching from Wikipedia for the teaching that polar aprotic solvents are solvents that share ion dissolving power with protic solvents but lack an acidic hydrogen.

Kempf et al. lacks the express teaching that molar ration between the dihalogen and compound (II) is 2 to 2.05. However, in table showing the test results for Example 1 in column 3, under Test No. 1 it appears that the ratio of Cl₂ (dihalogen) to para-trifluoromethylaniline is 2.2 to 2.3, which almost touches the ranges set out in Applicant's claim 7. Additionally, is close to the range disclosed in Applicant's claim 10.

Kempf et al. lacks the express teaching that the reaction temperature range is form 100 to 130°C or 105 to 115°C. However, Kempf's temperatures of reaction range between 0 and 150°, and stating that double chlorination occurs at temperatures greater than ambient temperature. In the table showing the test results for Example 1 the temperature ranges are from 80 to 110°C. The temperature ranges of Applicant's disclosure overlaps with those set out in Kempf et al. for the formation of dichloride-para-trifluoromethylaniline.

Finding of Prima Facie Obviousness Rational and Motivation

(MPEP §2142-2143)

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to prepare the compound of formula (I), as suggested by Kempf et al., and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because it is known in the art that protic solvents and aprotic solvents of high polarity react similarly in substitution reactions. Therefore, it is reasonable to assume that a polar aprotic solvent would yield positive results in a reaction where the end compound is a compound of formula (I). One skilled in the art would be motivated to choose art

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recognized alternative solvents as a matter of choice based on such factors as availability and cost.

Furthermore, in regard to the molar ratios in the reaction and the temperature ranges disclosed by applicant in the claimed process, with there being no evidence of unexpected results within the narrow molar and temperature ranges set out by Applicant in the process taught, one of ordinary skill would have expected dihalogenation of the compound formula (I) to occur.

Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

8. No Claims are allowed

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cartwright et al. U.S. Patent No. 4,384,135.

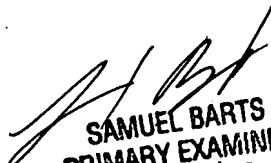
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yate K. Cutliff whose telephone number is (571) 272-9067. The examiner can normally be reached on M-TH 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272 - 0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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